

# Public Officials & Public Informational Meeting

April 19, 2021

## Bridge & Culvert Replacement NHDOT Project No. 42558

Bridge No. 140/097 – US Route 2 over Priscilla Brook

Culvert – US Route 2 over Unnamed Stream

# Zoom Meeting Tips:

- There will be an opportunity to ask questions and/or provide comments after the presentation.
- If you are using zoom you can use the “raise your hand” feature OR type your questions ahead of time using the “Q&A” feature located at the bottom of your screen.
- Individuals who are joining us via telephone can press \*9 to indicate that you wish to speak. You will be notified when your audio is connected; at that time please state your name before asking your question or stating your concern

# PRESENTERS

Kirk Mudgett, DOT Project Manager – Introduces Project

Sam White, McFarland Johnson – Design Alternatives

Christine Perron, McFarland Johnson – Natural and Cultural Resources

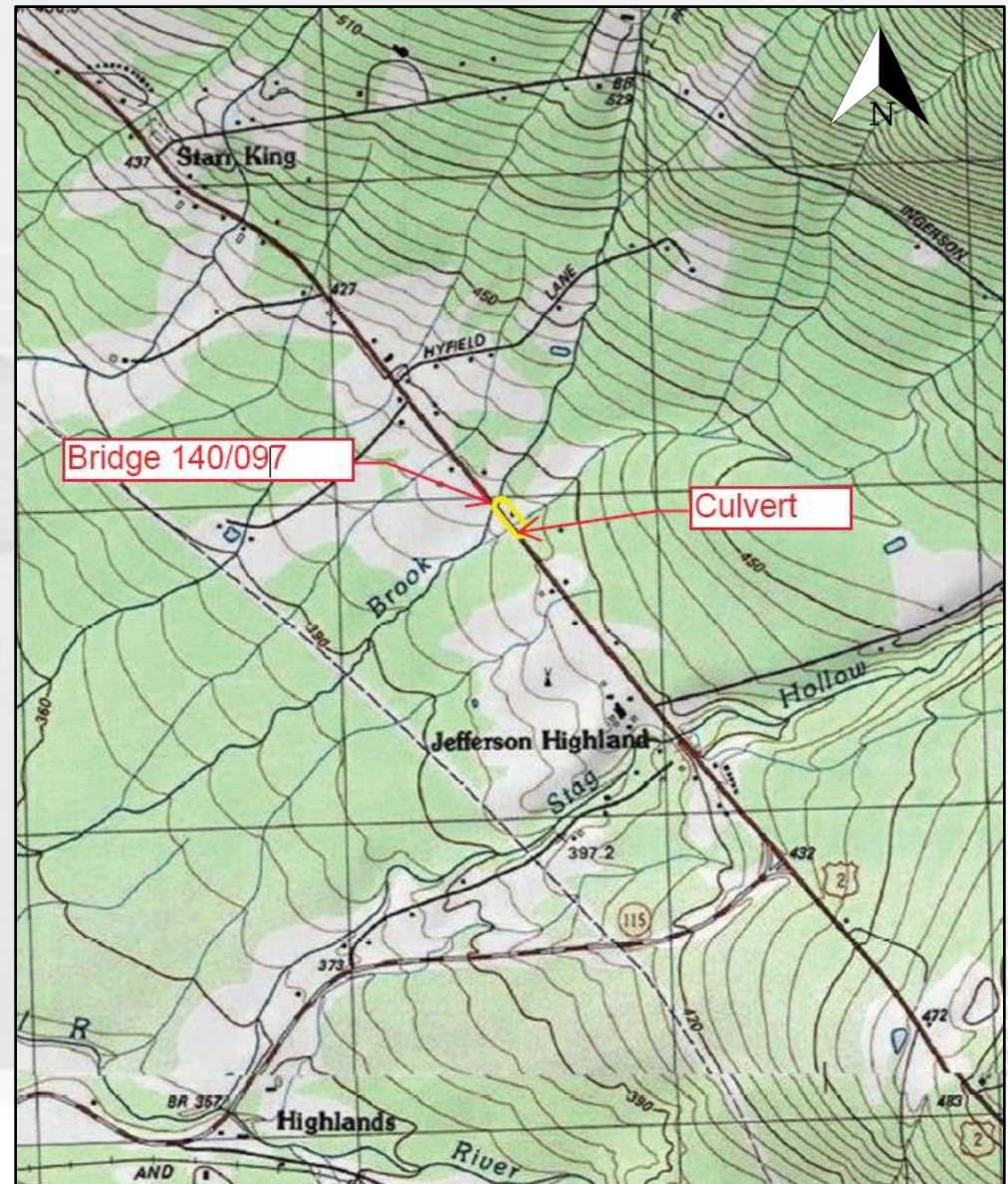
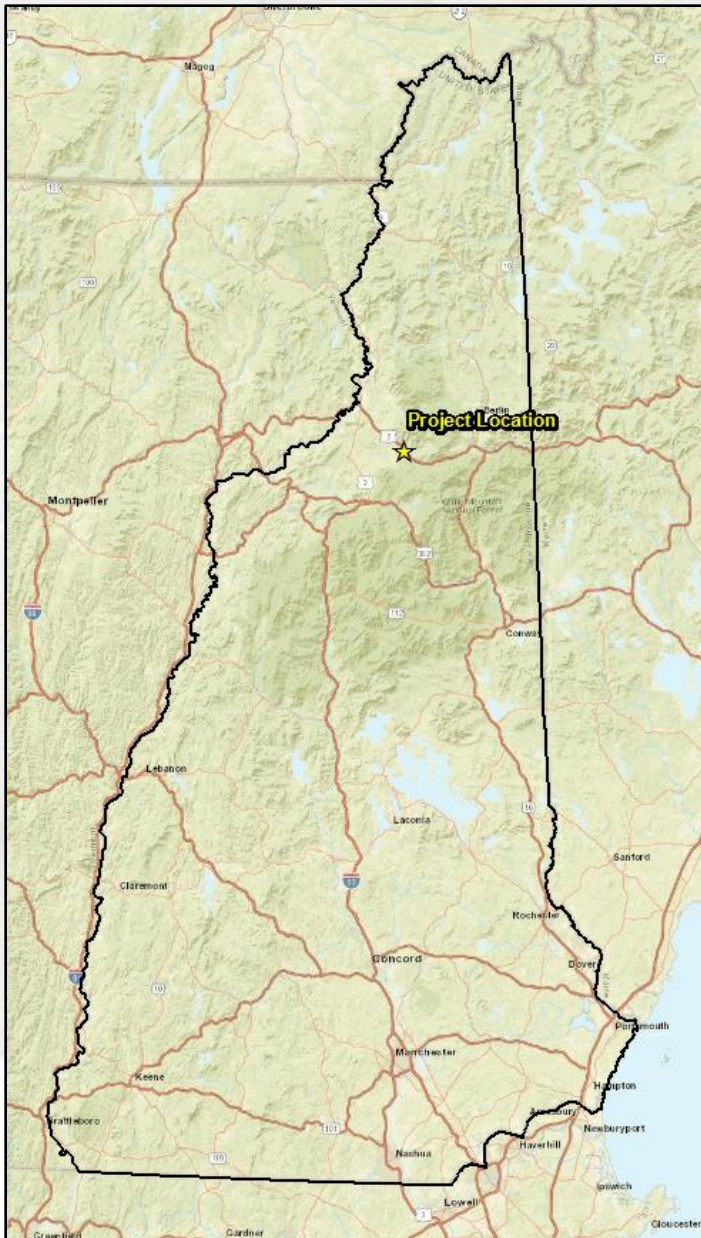
# PANELISTS

David Scott, DOT In-House Bridge Design Chief

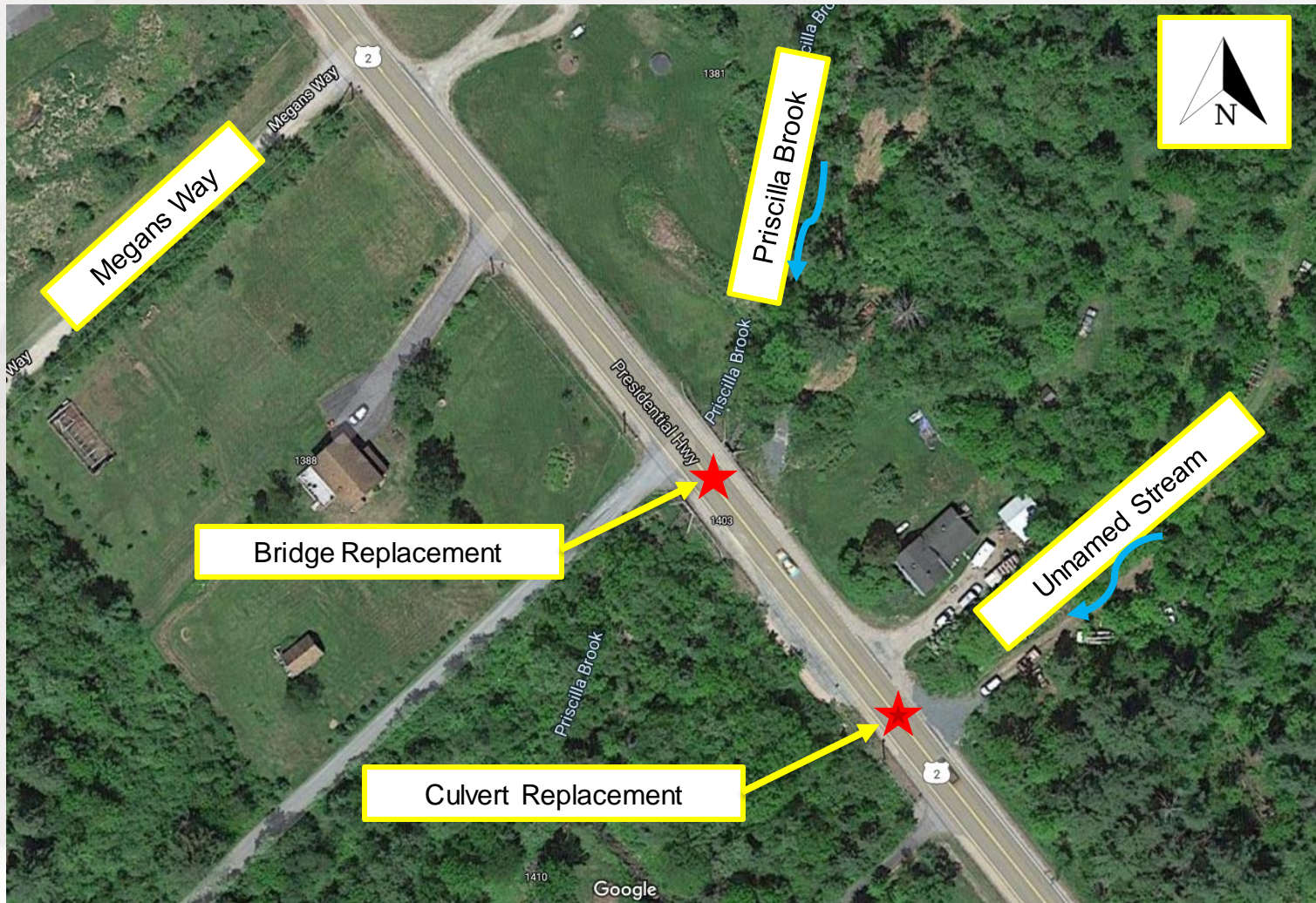
Bill Saffian, DOT Senior Project Engineer

Josh Lund, McFarland Johnson Design Team

# Project Location Map



# Project Site Map





Bridge No. 140/097 – US Route 2 over Priscilla Brook

# Existing Bridge Details

- Constructed in 1900
- 10' Jack Arch span on masonry abutments
- Widened in 1979 with a concrete slab superstructure on concrete abutments
- 47'-10" roadway width
- ~12' travel lanes and ~9' shoulders
- 2,800 vehicles per day, 7% trucks
- Deck, superstructure, and substructure all poor condition (Condition Rating of 4 out of 9)
- Added to NH State Red List in 2014

# Site Photos



Looking West Along US Route 2

- Local driveway southwest corner of bridge
- Aerial utilities on south side of US Route 2



Looking East Along US Route 2

- Local driveway northeast end of approach
- Aerial utilities on south side of US Route 2

# Site Photos



Looking Upstream (North)



Looking Downstream (South)

- Outlet approximately 2' lower than inlet
- Driveway runs parallel to the stream

# Bridge Condition



Bridge Underside of Widened Section  
(looking downstream)



Bridge Underside of Original Section  
(looking upstream)

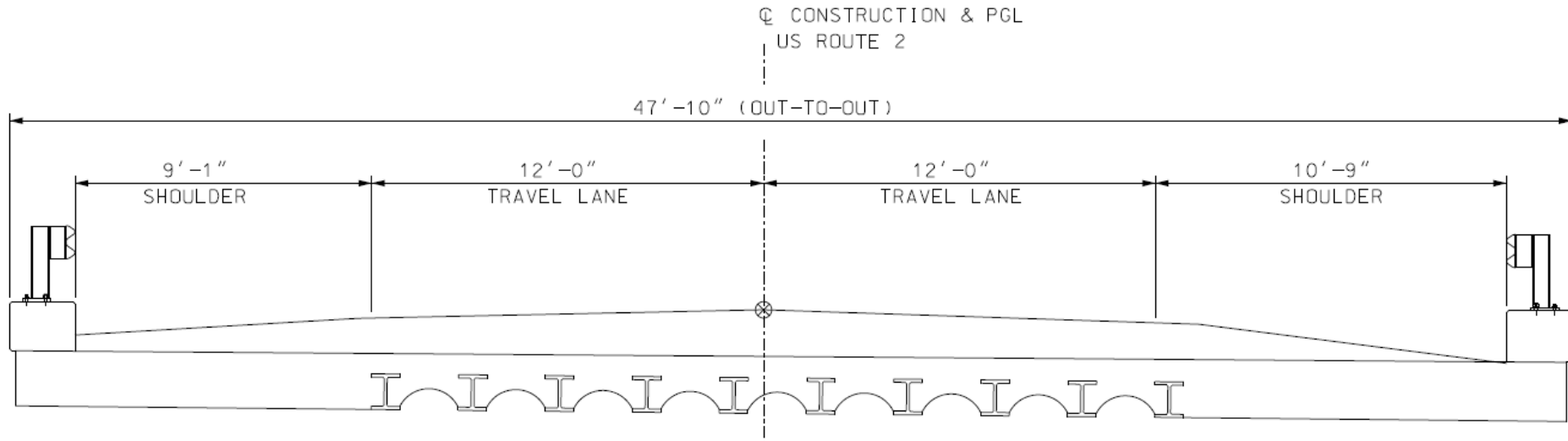
# Project Purpose and Need

- Poor condition of deck, superstructure, and substructure (remove from Red List)
- Increase hydraulic opening
  - Provide 1'-0" of freeboard for 100-year storm
- Wildlife connectivity through structure
  - Small mammals and amphibians
  - Provide wildlife shelf

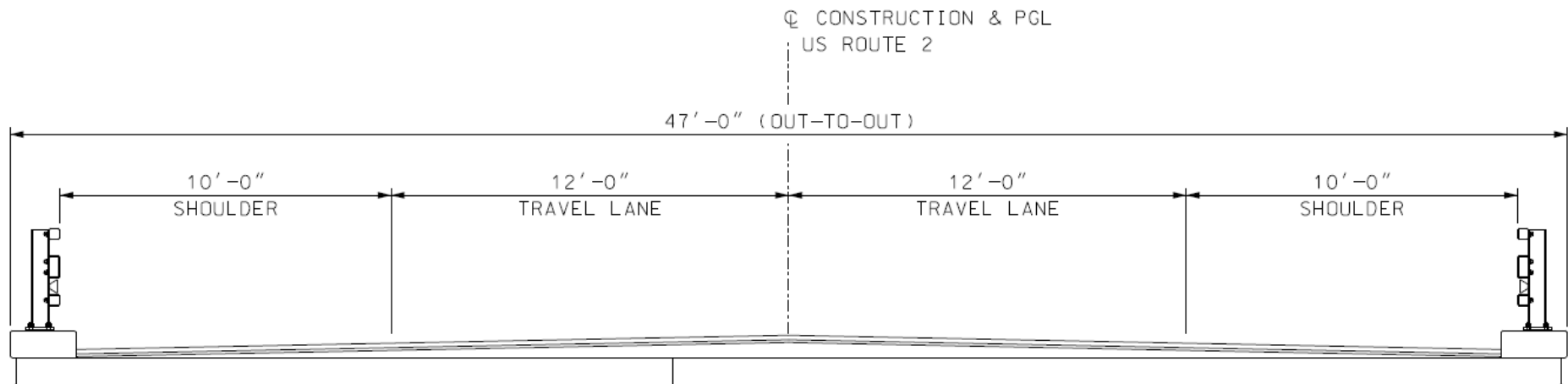
# Bridge Replacement

- Bridge span anticipated to be 15'-0" to 20'-0"
  - Proposed span limited by adjacent driveways
  - No significant permanent ROW impacts anticipated
- Superstructure alternatives include:
  - Precast concrete 4-sided box
  - Precast concrete 3-sided frame
    - Foundation: Concrete stub wall on spread footings
  - Concrete slab
    - Foundation: Full-height concrete abutments on spread footings
- 47'-0" out to out bridge width
  - 12'-0" travel lanes and 10'-0" shoulders
  - 3-bar steel bridge rail

# Typical Bridge Section



Existing Bridge Section



Proposed Bridge Section



## Culvert Replacement – US Route 2 over Unnamed Stream

# Existing Culvert Details

- Originally constructed in 1930
- 4' x 4' concrete box culvert, 36'-0" in length
- Repairs made to box culvert roof (year unknown)
- 48" CMP extensions added to both ends
- Stacked stone retaining wall on upstream side
- Inlet located between two driveways
- 2,800 vehicles per day, 7% trucks
- Sink holes beginning to develop in roadway due to deteriorating culvert structure

# Site Photos



Looking Upstream (North)

- Inlet located between two driveways



Looking Downstream (South)

# Site Photos



Stacked Stone Wall (Inlet)



CMP Extension (Inlet)

# Project Purpose and Need

- Address poor condition of existing structure
- Increase hydraulic opening
  - Accommodate the 100-year storm event
  - Existing structure has experienced flooding events impacting US Route 2

# Proposed Culvert Replacement

- 6'x9' Box culvert
  - Satisfies hydraulic design criteria
  - No significant permanent ROW impacts anticipated
- Natural stream bottom
  - Box culvert will be embedded 2' to provide a natural stream bottom

# Traffic Control Bridge and Culvert Replacement

# Maintenance of Traffic

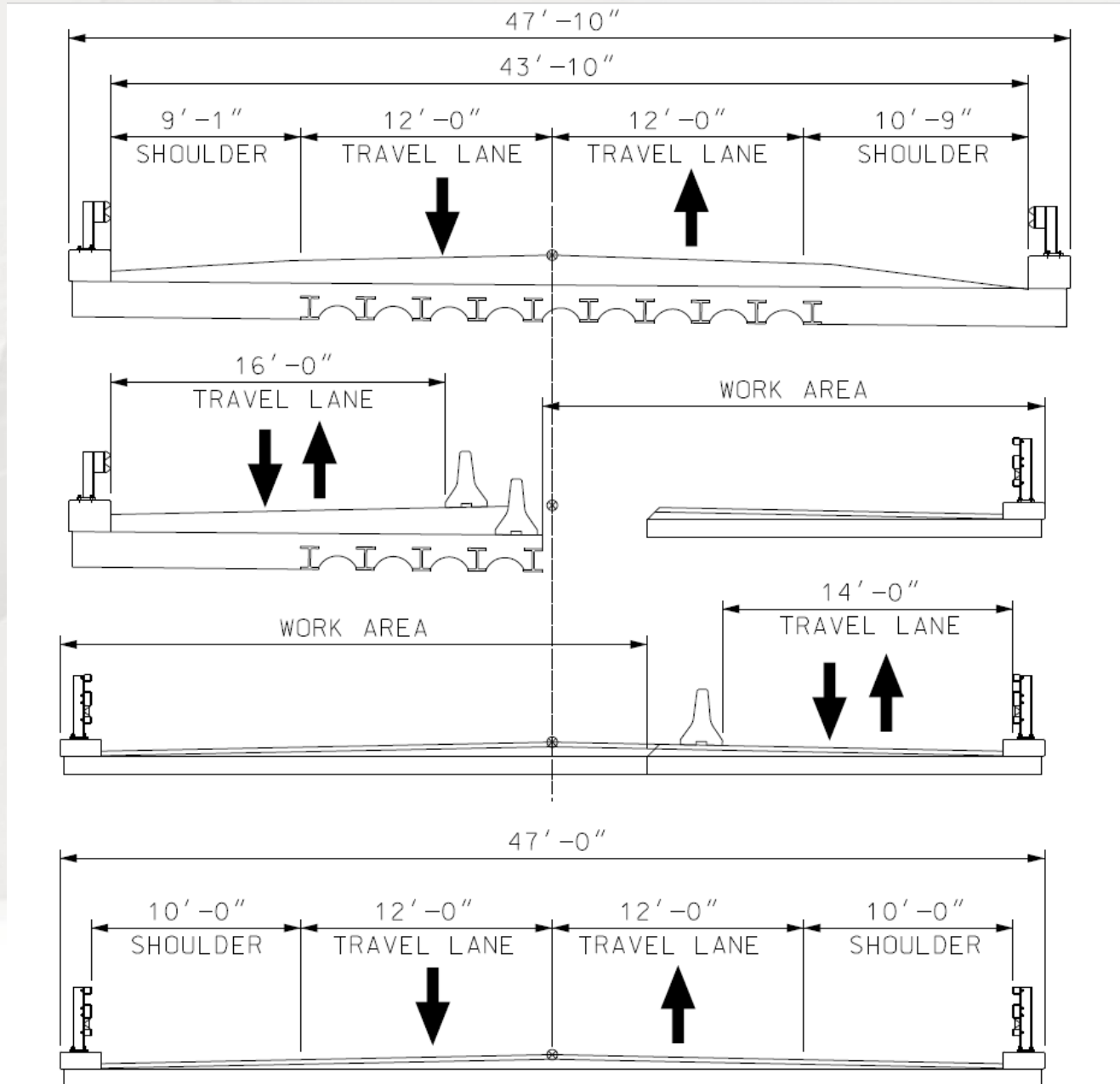
- Phased Construction to build structures
  - Two phases for both structures
  - Anticipated construction duration:  
1-2 construction season(s)
- Traffic Control Alternatives
  - Maintain a single lane – Proposed
  - Maintain two lanes of traffic – Investigated
  - Hybrid alternative - Investigated

# Maintenance of Traffic

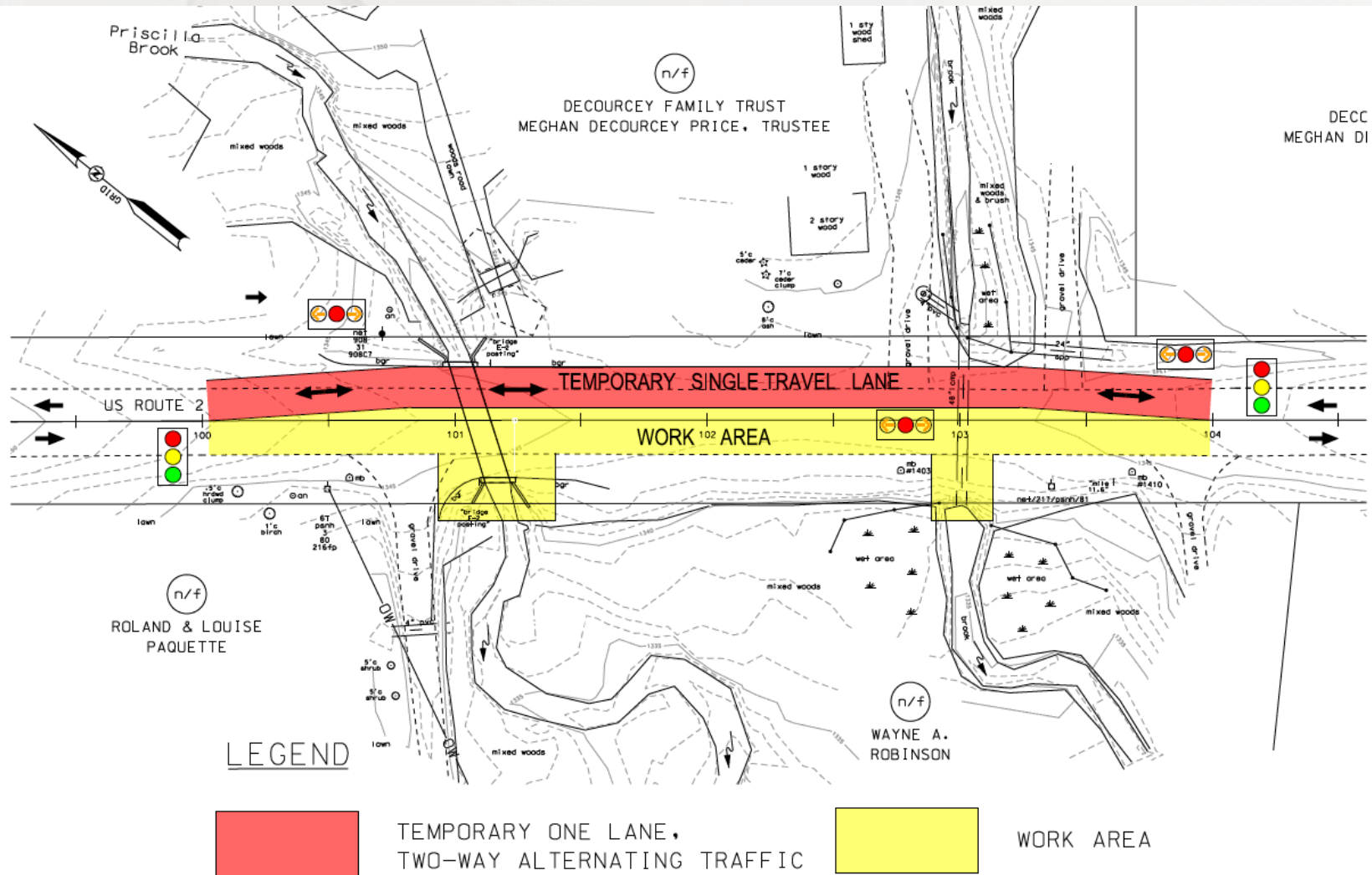
## Maintain a single lane – Proposed

- Two phases of signalized one-lane, alternating two-way traffic
- Traffic will remain within existing roadway area
- Minimizes temporary ROW impacts to adjacent properties, existing utilities, construction duration, and construction costs
- Emergency vehicle preemption devices provided.

# Construction Phasing (Maintain Single Lane)



# Single Lane Traffic Control Plan View



## PLAN

(PHASE 1 WORK AREA SHOWN, PHASE 2 WORK AREA ON OPPOSITE SIDE OF ROAD)

SCALE: 1" = 30'

# Construction Duration

## 1<sup>st</sup> Construction Season (~9 months)

Complete construction of new bridge and culvert structures

## 2<sup>nd</sup> Construction Season (~1-2 months)

Final paving, line striping, and final slope work (seeding)

- Signalized traffic patterns will only be used during the first construction season
- US Route 2 will be fully open to two lanes of traffic during the winter

# Maintenance of Traffic

## Maintain two lanes of traffic – Investigated

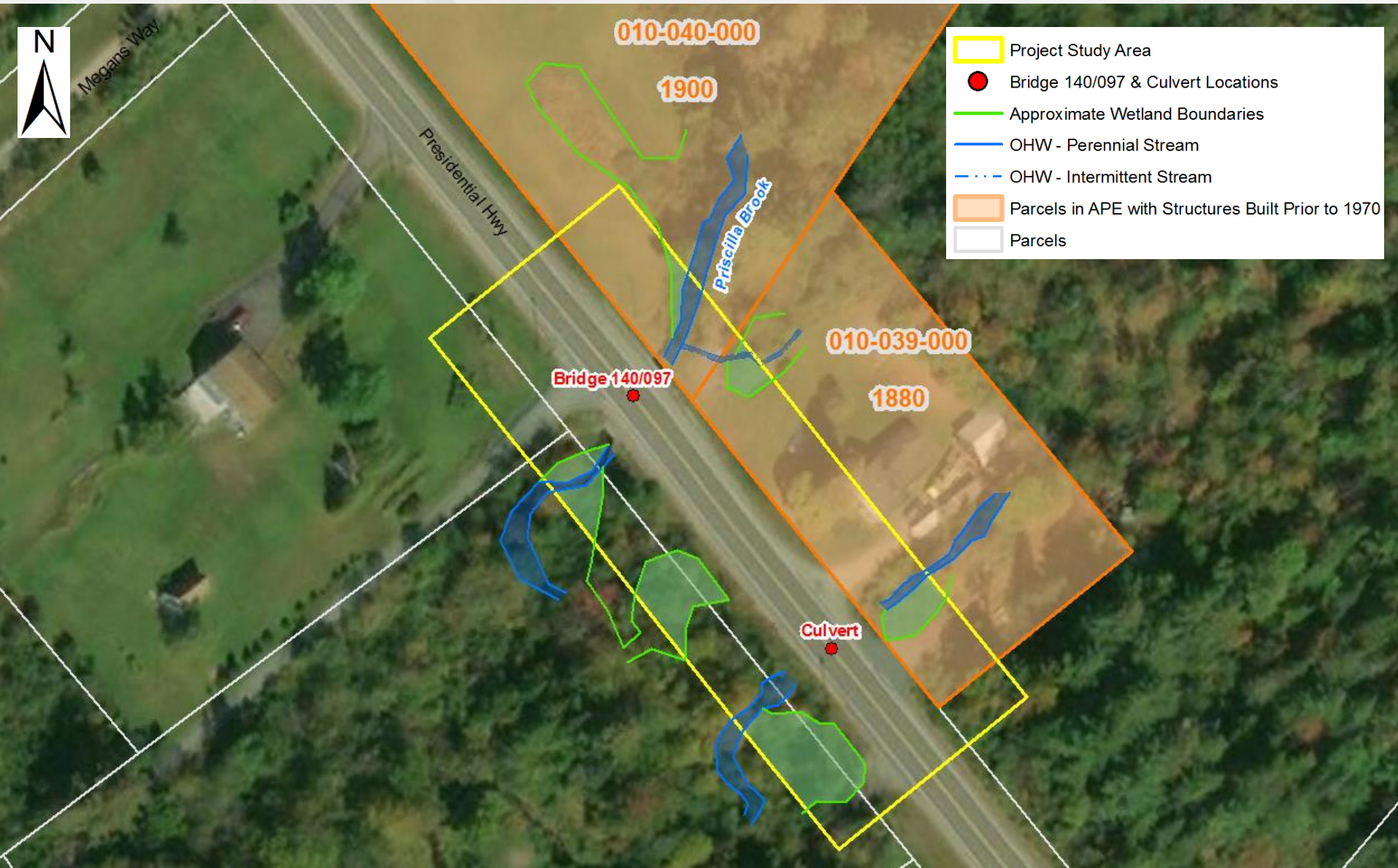
- Maintains two lanes of traffic in two phases of construction (no signalization)
- Will require relocation of existing aerial utilities
- Significant increase in temporary ROW and environmental impacts
- Increase in construction cost and duration
- Temporarily moves traffic closer to residence on the north side of the site

# Maintenance of Traffic

## Hybrid Alternative – Investigated

- Signalized one-lane, alternating two-way traffic in first phase and maintain two lanes of traffic in second phase
- Narrow lane width in first phase (12'-0")
  - US Route 2 is on the National Highway System (NHS) and is an important shipping route
- Would require over widening of the permanent structure (3'-0" wider than needed in final condition, 6% increase)
- Increase in construction and future maintenance cost

# Natural and Cultural Resources



# Cultural Resources

- Information or concerns?
  - Contact the project team or the NHDOT Bureau of Environment
- Want to be more formally involved?
  - Request to participate in historic resource review for this project as a consulting party under Section 106 of the National Historic Preservation Act by contacting Jamie Sikora at FHWA:  
[Jamie.Sikora@fhwa.dot.gov](mailto:Jamie.Sikora@fhwa.dot.gov)
- Want more info?
  - Google “NHDOT Consulting Party Brochure”  
<https://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/documents/Bureau16consultingpartyhandout-updatedAug2011.pdf>

# Project Schedule

- Public Officials / Public Informational Meeting – April 19, 2021
- Present preferred alternatives to Cultural and Natural Resource Agencies to get their input and comments – June 2021
- Complete the NEPA process (National Environmental Policy Act) - August 2021
- Final Design Completion - August 2022
- Advertisement – November 2022
- Construction Completed – 2024

# Your Input is Needed

- Emergency response routes
- Mutual aid
- School bus routes
- Historic concerns
- Past flooding concerns
- Bicycle and pedestrian concerns
- Seasonal construction constraints
- Local/Regional events occurring during construction
- Abutter concerns
- Other concerns

## Contact Information:

- Project Manager – Kirk Mudgett, P.E.
- Email – [Kirk.O.Mudgett@dot.nh.gov](mailto:Kirk.O.Mudgett@dot.nh.gov)
- Telephone – (603) 271-1598

# Meeting Participant Protocols:

- This is now your opportunity to ask questions and/or provide comments.
- Questions/comments can either be entered into the “Q&A box”, or can be addressed through the “raise your hand” option if you prefer to speak.
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# Questions?

